

## Mid-Infrared Imaging of C/1996 B2 (Hyakutake)

J. Sarmecanic, M. Fomenkova, B. Jones (CASS, UCSD)

We present analysis of mid-infrared imaging of Comet Hyakutake taken with the UCSD "Golden Gopher" infrared camera at the 1.5-m Mt. Lemmon Observational Facility on the nights of 18-20 March 1996 UT. High-resolution images (100 km/pixel at the comet) of the inner coma, covering 5000 km centered on the nucleus, were obtained at 8.7, 11.7, and 12.5  $\mu m$  on all three nights, and the first-ever 19.5  $\mu m$  images of the comet were obtained on the nights of March 19 and 20. Photometry in a 10-arcsecond aperture at these wavelengths reveals dust temperatures 20%, 30%, and 10% higher than the equilibrium temperature on these three nights, respectively. The 10- $\mu m$  silicate emission feature is generally weak, and only discernible at 11.7- $\mu m$  on March 19 when the Superheat is 30%. This suggests that the major dust constituents are not silicate grains, but probably large (radii  $> 5 \mu m$ , densities close to  $1.0 g/cm^3$ ) organic grains (Sarmecanic et al., 1996). Assuming these grains predominate, the mass loss rate on these nights is estimated to be about  $5 \times 10^3$  kg/s. The observed coma morphology is generally isotropic, but exhibits an anti-Sunward extension, as well as a broad Sunward enhancement. These features dominate the structure when the isotropic (1/r) component of the dust emission is subtracted off. Furthermore, these features persist from night to night, implying that the rotation period is an integral fraction of 24 hours, say 6 or 8 hours, as has been suggested by other observers (IAUC 6344, 6354, 6372). Finally, color maps of the ratios of different wavelengths will be presented.

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Paper presented by James R. Sarmecanic

CASS -0111  
UC San Diego  
9500 Gilman Dr.  
La Jolla CA 92121-0111 USA  
Phone: 619-534-4475  
Fax: 619-534-7051  
Email: jrs@cassir.ucsd.edu

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